California Monthly Climate Summary
July 2014

Weather Highlights

July 2014 was a warm and dry month for California. According to the Western Region Climate Center's California Climate Tracker, the monthly average temperature was 75.2°F which is 2.4°F higher than the long-term average of 72.8°F. With a statewide average of 0.13 inches, precipitation in July was 68% of average.

July started hot across the State as a strong ridge of high pressure dominated the weather pattern. Towards the end of the week the high shifted east enabling monsoonal moisture to stream into the state spawning thunderstorms that produced localized flash flooding. Monsoonal moisture flow continued into the second week of July with thunderstorms across the Sierra and some scattered showers hitting the Sacramento region. A passing weather system interacting with the monsoon moisture flow during the third week resulted in cloudy weather and scattered showers in the Central Valley and stronger precipitation in the Sierra. Accumulations were insignificant and did not modulate the drought conditions gripping the state. The cloud cover resulted in cooler temperatures. The month closed out with temperatures warming back above normal.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 54 temperature records tied or broken and 22 precipitation records set for the month. Of the 54 temperature records set, 22 were for new high maximum temperatures and 32 were for new high minimum temperatures. Of the 22 precipitation records set, 12 were for a trace of precipitation. Records were set over 20 days of the month.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 7 stations recorded a minimum temperature below freezing in March while 110 stations reached or exceeded 100°F at least once during the month. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A table of regional average minimum, mean, and maximum temperatures from the CDEC stations is also shown at the end of the summary.

Precipitation in July was impacted in places by an active monsoon. For the CDEC precipitation gages for July 2014, the largest amount of precipitation recorded was at Hetch Hetchy in the San Joaquin region with 1.54 inches. This is 856% of the average precipitation for this station for July. At the other end of the spectrum, 28 stations recorded no precipitation for the month. For the CIMIS network, Moraga in Contra Costa County topped the precipitation charts with 3.99 inches for the month and 79 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network.

The 8-Station Index for northern California precipitation recorded 0.2 inches in July. On average, 0.2 inches of precipitation is recorded for the 8-Station index for the month. The San Joaquin 5-Station Index recorded 0.4 inches of precipitation for July. On average, 0.3 inches of precipitation is recorded for the 5-Station Index for the month.

CoCoRaHS Update

Water Year 2014 continues California's fifth year with CoCoRaHS – the Community Collaborative Rain, Hail and Snow Network. This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns. A map from July 11, 2014 is shown at the end of the document. As of the end of July, California has 1153 volunteers signed up spanning 54 of California's 58 counties. The counties without volunteers are Alpine, Colusa, Glenn, and Modoc. The counties with the most volunteers at the end of June are San Diego and Sonoma with 104 and 101 volunteers respectively. For the month of July, 10,487 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in July was in San Bernardino County where 1.92 inches was recorded on 7/5/2014. There were zero reports of snowfall recorded during the month and no total depth of snow reported in July. No hail reports were submitted for the month. To join CoCoRaHS or find more information, please visit http://www.cocorahs.org.

Snowpack and Water Supply Conditions

April 1st is the traditional peak of the snowpack accumulation in the Sierra Nevada. At the end of May 2014, all three regions reported no snow water equivalent. The Water Supply Index (WSI) for WY2013 for the Sacramento Basin fell into the dry category and the San Joaquin fell into the critical category. The median forecast for the WSI for both the Sacramento and San Joaquin Basins this year is the critical category. More information can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

Drought Monitor and Seasonal Outlook

The maps for California for June 24, 2014 and July 29, 2014 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website http://drought.unl.edu/dm/. These maps are largely a reflection of precipitation and soil moisture deficit estimates. As of the July 29th depiction, 58.41% of California is depicted in the D4 or exceptional drought category, 23.48% of California is depicted in the D3 or extreme drought category, and 18.11% of California is depicted in D2 or severe drought category. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for August through October from NOAA depicts California in persisting drought throughout the state. This forecast is based primarily on climatology and forecast models. Maps and information can be found at

http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html. Updates are provided twice per month.

For more information on water conditions in California, visit http://www.water.ca.gov/waterconditions/. A table showing end-of-July reservoir storage by hydrologic region is shown at the end of this document.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is currently in neutral conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been positive with values of 0.2°C in the Niño 3.4 at the end of July. The May through July 3-month running mean of the Ocean Niño Index (ONI) is 0.1. Five consecutive ONI values need to be above the 0.5 threshold need to be observed for classification as an El Niño event. Most forecast models have the tropical sea surface transitioning to El Niño conditions by the latter part of summer. More information can be found at the Climate Prediction Center's web site:
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/
Updates are posted weekly. The latest three month outlook (August through October) from NOAA indicates a higher probability for above normal temperatures for the State. For precipitation, a higher probability of above average conditions is forecast across the southern third of the State associated with the summer monsoon . Outlook plots and discussions can be fount at http://www.wrcc.dri.edu/longrang/. General weather information of interest can be found at http://www.noaawatch.gov/. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

July 2014 saw harvests and crop development across the state. Cotton fields are in full bloom with 85% rated good to excellent. Alfalfa was cut, dried and baled and Sudan grass showed significant growth. Gala and Granny Smith apple harvests got off to an early start. Pear and table grapes continued to be harvested. Olives were sprayed for Olive Fruit Fly. Shaking has started in some almond orchards. Some spraying for husk fly is occurring in walnut orchards and early splits are showing up in Pistachio orchards. Tomato harvest is active in many counties. Cantaloupe, honeydew, and other vegetables were harvested and sold at farmer's markets. Herd reduction continues due to lack of forage. Milk production was negatively impacted by the hot weather. For further crop information see http://www.nass.usda.gov/index.asp.

Other Climate Summaries

California Climate Tracker (new product of Western Region Climate Center)
Golden Gate Weather Service Climate Summary
NOAA Monthly State of the Climate Report

Statewide Extremes (CDEC)

High Temperature – 120°F (Buttercup and Cahuilla, Colorado River Desert)
Low Temperature – 29°F (Rock Creek Lakes, Southern Lahontan)
High Precipitation – 1.54 inches (Hetch Hetchy, San Joaquin)
Low Precipitation – 0 inches (28 stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 109 ^{0}F (Cadiz Valley, San Bernardino County)
Low Average Minimum Temperature – 42^{0}F (Petaluma East, Sonoma County)
High Precipitation – 3.99 inches (Moraga, Contra Costa County)*
Low Precipitation – 0 inches (79 stations)
*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered.

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	19	45.9	72.3	97.3
SF Bay	9	51.7	70.7	96.7
Central Coast	10	52.0	73.1	98.2
South Coast	41	55.6	75.4	99.6
Sacramento	72	51.1	75.5	99.4
San Joaquin	44	52.0	71.8	94.0
Tulare Lake	17	50.7	69.5	89.4
North Lahontan	23	44.0	63.5	85.6
South Lahontan	14	47.6	67.5	88.9
Colorado River Desert	7	72.1	93.2	114.7
Statewide Weighted Average	256	50.3	73.0	96.6

Statewide Precipitation Statistics

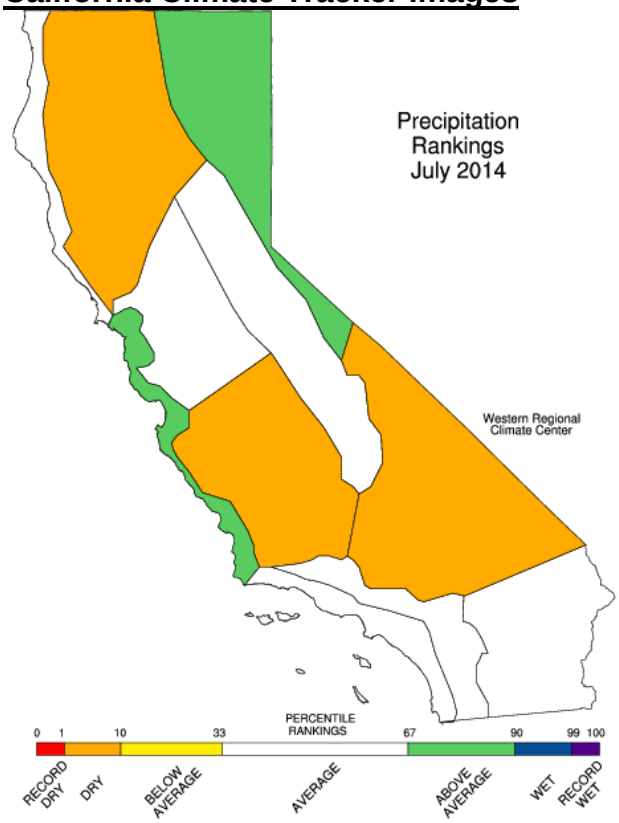
Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Jul	Oct-Jul	Stations	Jul	Oct-Jul	Jul	Oct-Jul
North Coast	0.27	5	3	3	17	8	8	103%	43%
SF Bay	0.03	2	2	2	6	4	4	22%	59%
Central Coast	0.06	3	3	2	11	2	2	65%	46%
South Coast	0.06	3	3	3	14	11	9	187%	40%
Sacramento River	0.26	5	5	5	41	10	10	62%	56%
San Joaquin River	0.12	6	5	4	24	10	7	415%	54%
Tulare Lake	0.07	5	4	4	28	14	15	124%	46%
North Lahontan	0.04	3	3	3	13	5	5	205%	73%
South Lahontan	0.06	3	2	2	15	2	2	30%	61%
Colorado River	0.03	1	1	1	6	4	3	36%	37%
Statewide Weighted Average	1	36	30	29	175	70	65	129%	50%

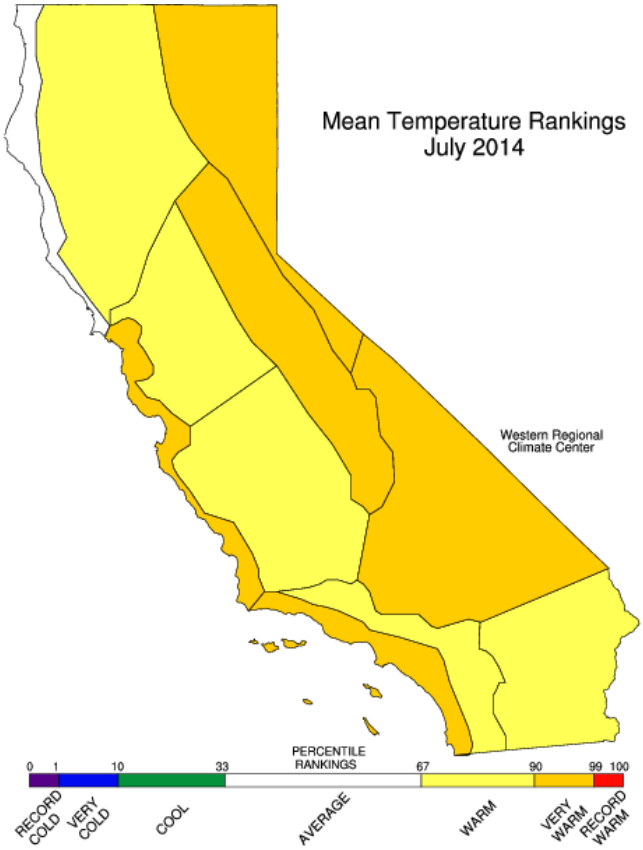
End-of-July Reservoir Storage by Hydrologic Region

Storage in Thousand Acre-Feet (taf)

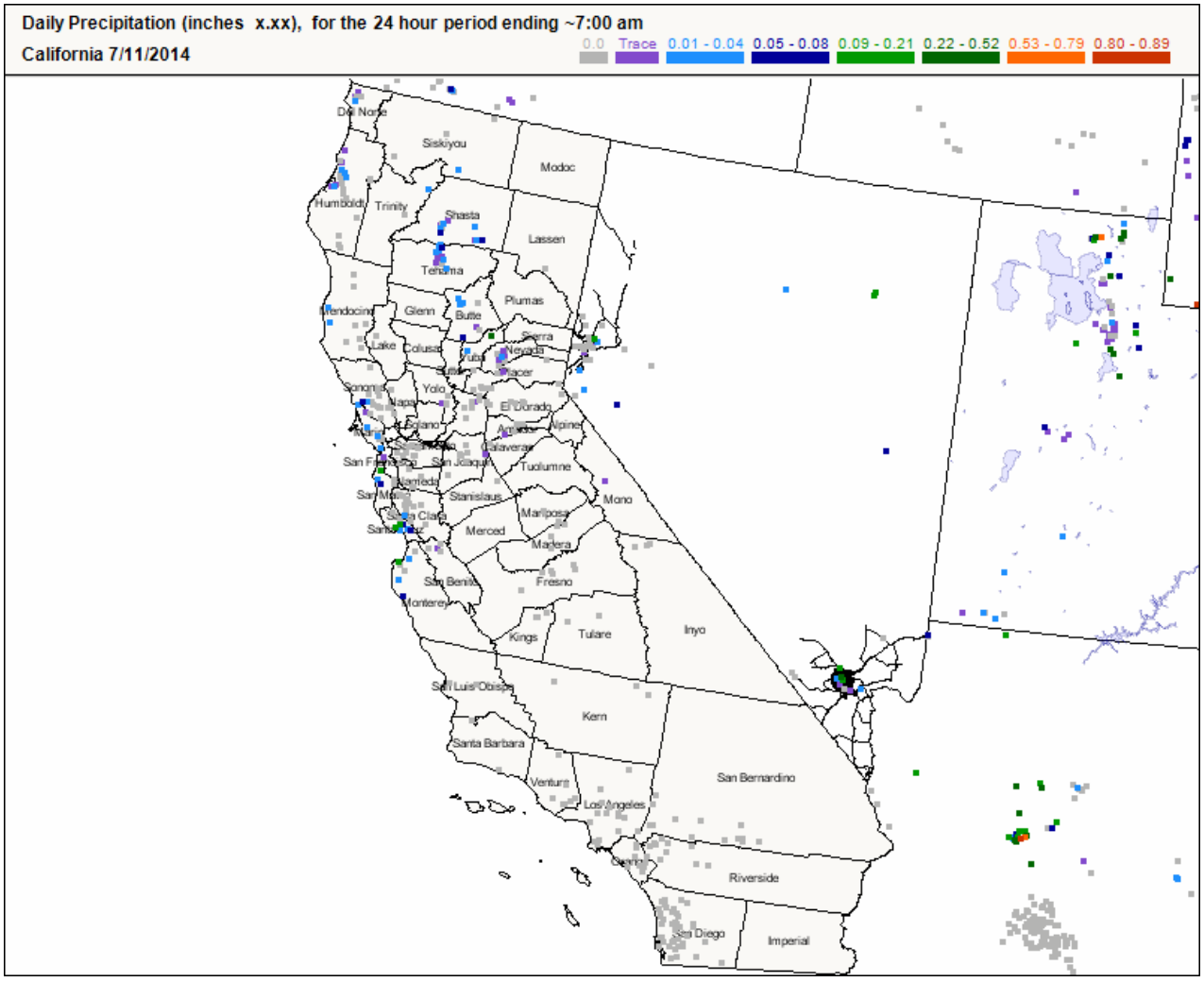
End-of-July Reservoir Storage	Number of Reservoirs	Average Storage (taf)	2014 Storage (taf)	% of Average
North Coast	6	2,335	1,134	49%
San Francisco Bay	17	469	438	93%
Central Coast	6	622	177	28%
South Coast	29	1,420	956	67%
Sacramento	43	11,809	7,307	62%
San Joaquin	34	7,552	4,314	57%
Tulare	6	1,053	357	34%
North Lahontan	5	649	184	28%
South Lahontan	8	306	239	78%
Total	154	26,219	15,111	58%

California Climate Tracker Images





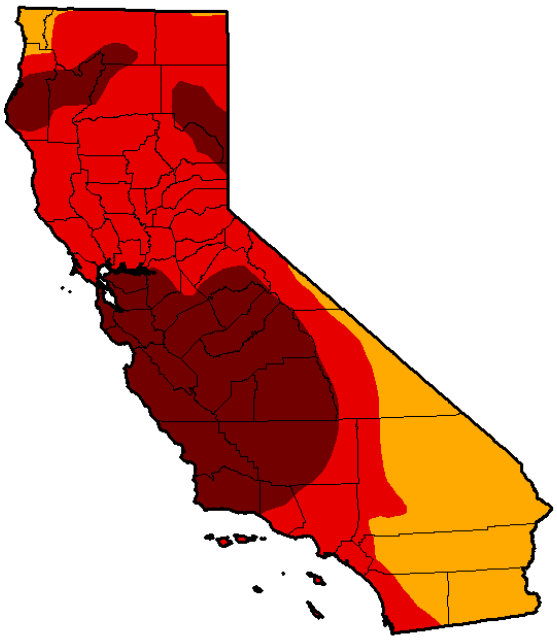
CoCoRaHS Map



United States Drought Monitor

U.S. Drought Monitor

California



June 24, 2014

(Released Thursday, Jun. 26, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	76.69	32.98
Last Week 6/17/2014	0.00	100.00	100.00	100.00	76.69	32.98
3 Months Ago 3/25/2014	0.00	100.00	99.80	95.21	71.78	23.42
Start of Calendar Year 12/31/2013	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 10/1/2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 6/25/2013	0.00	100.00	98.21	92.61	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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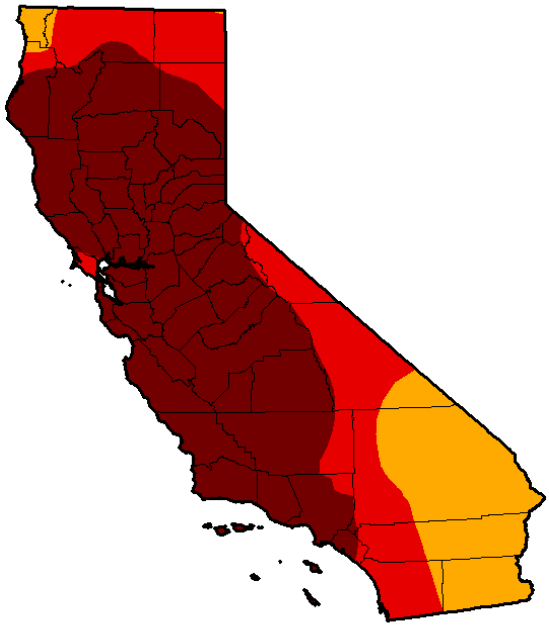
http://droughtmonitor.unl.edu/

U.S. Drought Monitor

California



July 29, 2014

(Released Thursday, Jul. 31, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	81.89	58.41
Last Week 7/22/2014	0.00	100.00	100.00	100.00	81.89	36.49
3 Months Ago 4/29/2014	0.00	100.00	100.00	96.01	76.68	24.77
Start of Calendar Year 12/31/2013	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 10/1/2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 7/30/2013	0.00	100.00	98.23	93.86	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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